

Semi piano superiore

$$A = \{(x, y) \in \mathbb{R}^2 \mid y > -x+1\}$$

$$y = -x+1$$

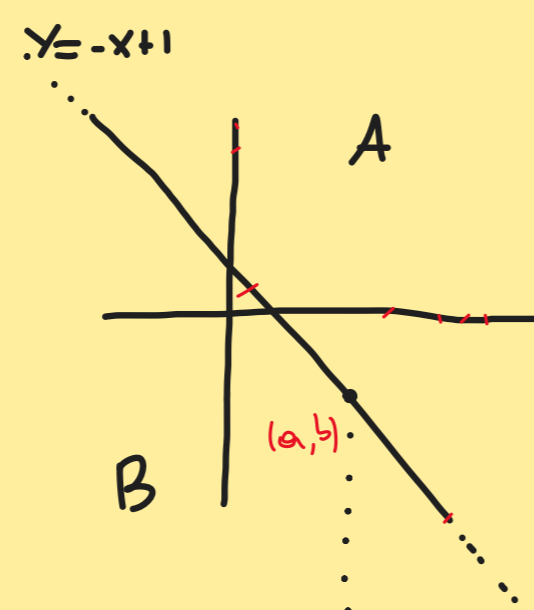
$$b = -a+1$$

$$y > -a+1 = b$$

$$y > -x+1$$

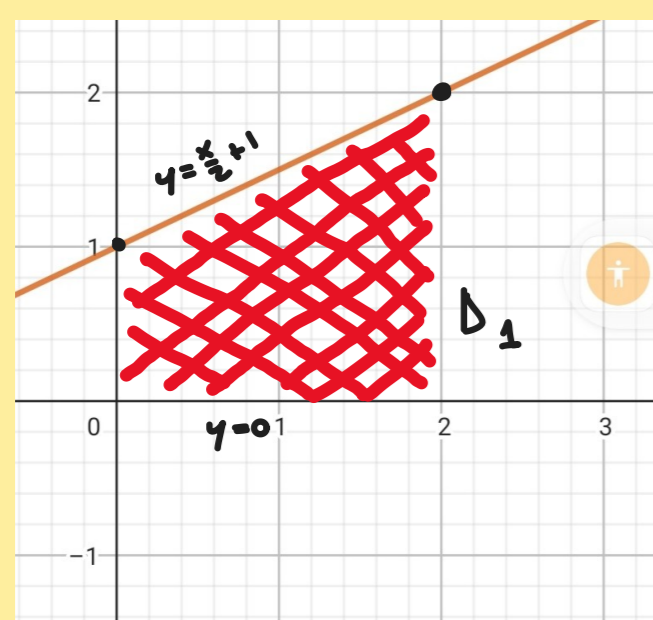
se (a,b) è un punto della retta, se voglio descrivere il semipiano superiore mi basta prendere i punti che hanno ascissa a e ordinata maggiore di b=-a+1.

Faccio lo stesso discorso per tutti i punti della retta al variare di x



$$B = \{(x, y) \in \mathbb{R}^2 \mid y < -x+1\}$$

analogamente, per rappresentare il semipiano inferiore, devo prendere punti che abbiano le ordinate minori di -x+1



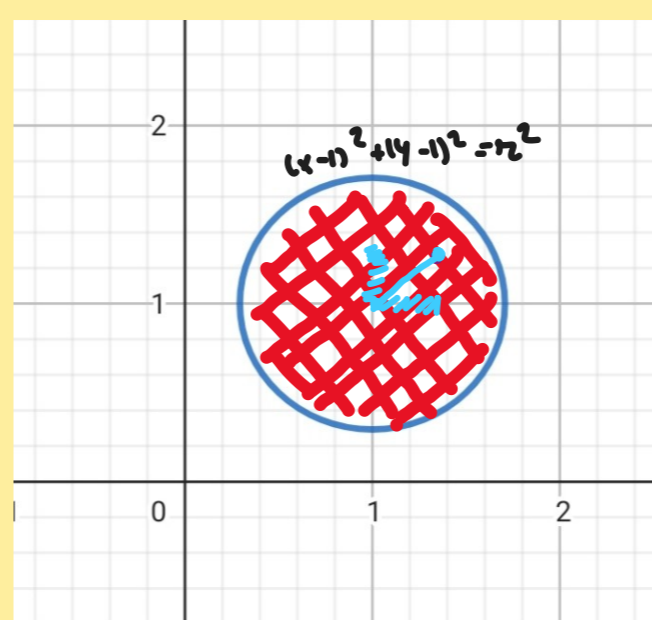
P. (0,1), (2,2)

$$\frac{y-y_1}{x-x_1} = \frac{y_2-y_1}{x_2-x_1} \Rightarrow \frac{y-1}{x-0} = \frac{2-1}{2-0}$$

$$\frac{y-1}{x} = \frac{1}{2} \quad y-1 = \frac{x}{2} \quad y = \frac{x}{2} + 1$$

$$D_1 = \{(x, y) \in \mathbb{R}^2 \mid 0 < x < 2, y < \frac{x}{2} + 1, y > 0\}$$

$$= \{(x, y) \in \mathbb{R}^2 \mid 0 < x < 2 \wedge 0 < y < \frac{x}{2} + 1\}$$

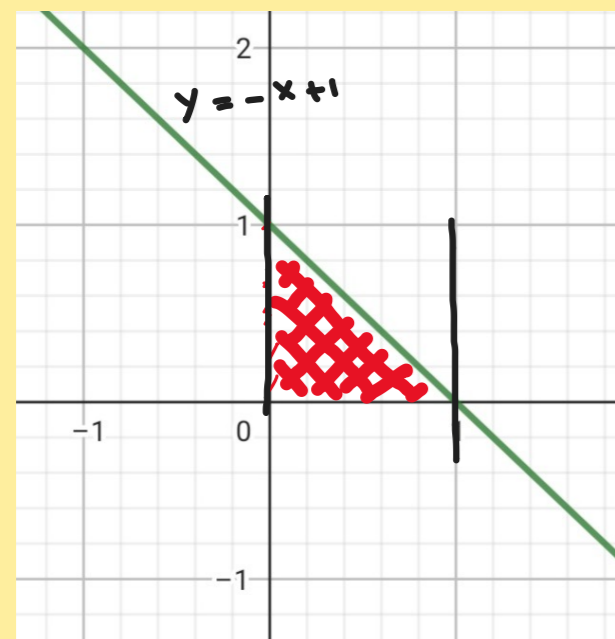


$$D_4 = \{(x, y) \in \mathbb{R}^2 \mid (x-1)^2 + (y-1)^2 < r^2\}$$

$$(x-1)^2 + (y-1)^2 = r^2 \quad a < r$$

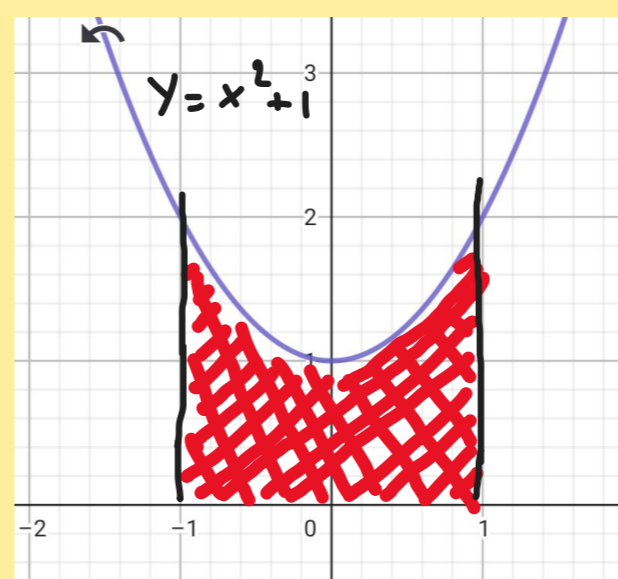
$$(x-1)^2 + (y-1)^2 = a^2$$

$$(x-1)^2 + (y-1)^2 < r^2$$

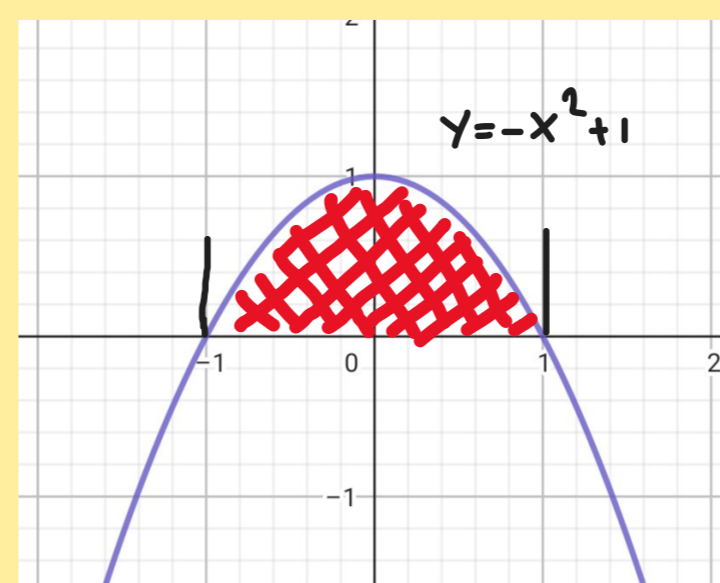


$$y = -x+1 \quad y = 0$$

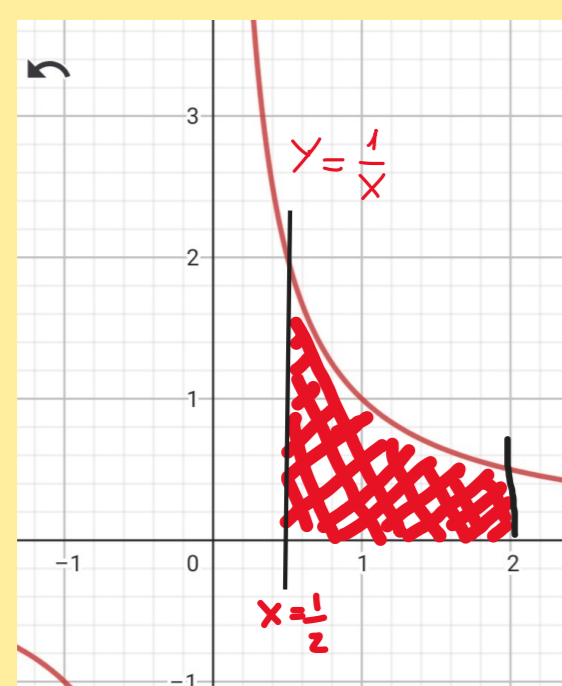
$$D_2 = \{(x, y) \in \mathbb{R}^2 \mid 0 < x < 1 \wedge y < -x+1 \wedge y > 0\}$$



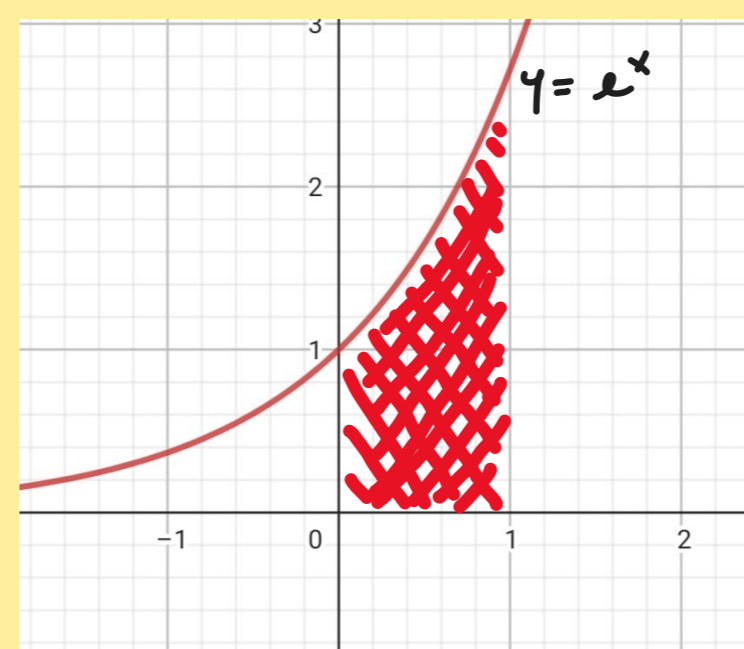
$$D_5 = \{(x, y) \in \mathbb{R}^2 \mid -1 < x < 1 \wedge 0 < y < x^2 + 1\}$$



$$D_6 = \{(x, y) \in \mathbb{R}^2 \mid -1 < x < 1 \wedge 0 < y < -x^2 + 1\}$$



$$D_3 = \{(x, y) \in \mathbb{R}^2 \mid \frac{1}{2} < x < 2 \wedge 0 < y < \frac{1}{x}\}$$



$$D_7 = \{(x, y) \in \mathbb{R}^2 \mid 0 < x < 1 \wedge 0 < y < e^x\}$$